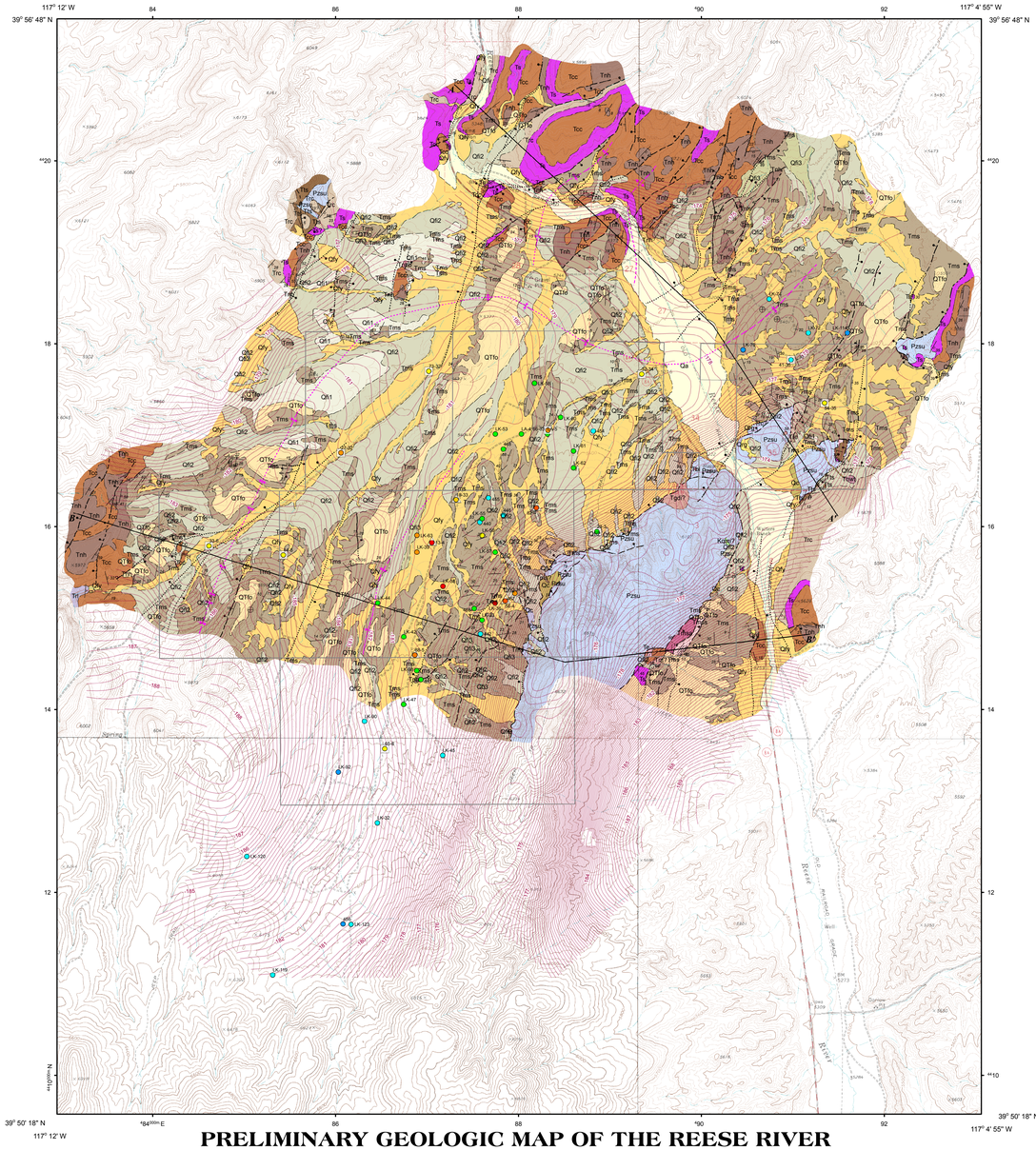
Prepared with the support from Sierra Geothermal Power Corporation, Ram Power Corporation, and by Department of Energy through the Great Basin Center for Geothermal Energy






# PRELIMINARY GEOLOGIC MAP OF THE REESE RIVER GEOTHERMAL AREA, LANDER COUNTY, NEVADA

Nicholas H. Hinz and James E. Faulds
Nevada Bureau of Mines and Geology

2011

**QUATERNARY DEPOSITS**

- Qa — **Holocene channel alluvium**
- Qfy — **Holocene alluvial fan deposits**
- $Qf_5$ — **Early Holocene to Late Pleistocene alluvial fan deposits**
- $Qf_2$ — **Middle Pleistocene alluvial fan deposits**
- $Qf_1$ — **Middle to early Pleistocene alluvial fan deposits**
- QTfo — **Early Pleistocene(?) to late Pliocene(?) alluvial fan deposits and roundstone gravels**
- Qrg — **Pleistocene roundstone gravels**
- Qc — **Colluvium**

**TERTIARY SEDIMENTARY DEPOSITS AND VOLCANIC ROCKS (Oligocene to Pliocene)**

- Tms — **Miocene sediments**
  - Tmc — **Conglomerate**
  - Tmsa — **Altered sediments**
  - Tmss — **Sandstone**
- Tcg — **Conglomerate, commonly silicified**
- Tnhb — **Breccia composed entirely of boulder-sized Nine Hill Tuff clasts**
- Tnh — **Nine Hill Tuff, 25.3 Ma**
- Tnt — **Non-welded ash-flow tuff**
- Tcc — **Tuff of Cambell Creek, 28.8 Ma**
- Te — **Tuff E, 29.0 Ma**
- Tc — **Conglomerate**
- Ts — **Tuff of Sutcliffe, 30.3 Ma**
- Trc — **Tuff of Rattlesnake Canyon, 31.1 Ma**
- Tnwt — **Non-welded ash-flow tuff**
- Tts — **Tuffaceous sediments**
- Tt — **Ash-flow tuff, undivided**
- Tr — **Rhyolite lavas and domes**
- Trl — **Oligocene rhyolite lavas**

**TERTIARY INTRUSIVE ROCKS**

- Tbi — **Basalt intrusion**
- Tgdi — **Granodiorite intrusion**
- TKiu — **Tertiary to Cretaceous intrusions, undistinguished, shown only in cross-sections (Paired with Pzsu)**

**GRANITIC BASEMENT (Mesozoic)**

- Kqmi — **Quartz monzodiorite dike**

**SEDIMENTARY BASEMENT (Paleozoic)**

- Pzsu — **Undivided sedimentary basement**

**Symbology** (per FGDC-STD-013-2006)

**Contact** Long-dashed where approximate.

**Normal fault** Long-dashed where approximate, dotted where concealed; queried if identity or existence uncertain. Ball on downthrown side. Showing dip value and direction.

**Strike-slip fault** Long-dashed where approximate. Arrows show relative motion.

**Anticline** Long-dashed where approximate, dotted where concealed.

**Syncline** Long-dashed where approximate, dotted where concealed.

**Gravity contour** Contour interval 0.02 mGal

**Strike and dip of bedding**
Inclined — Horizontal

**Strike and dip of compaction foliation in ash-flow tuff**
Inclined

**Strike and dip of metamorphic foliation**
Inclined

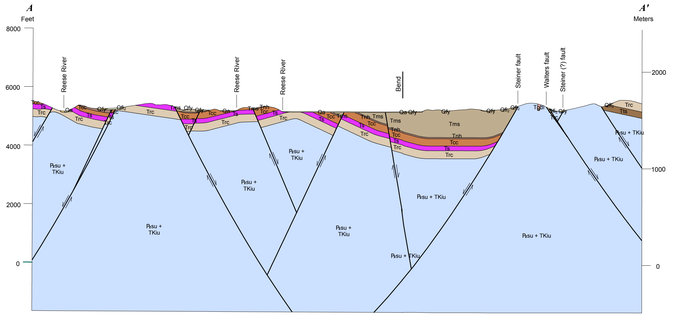
**Strike and dip of flow banding or flow foliation in igneous rocks**
Inclined

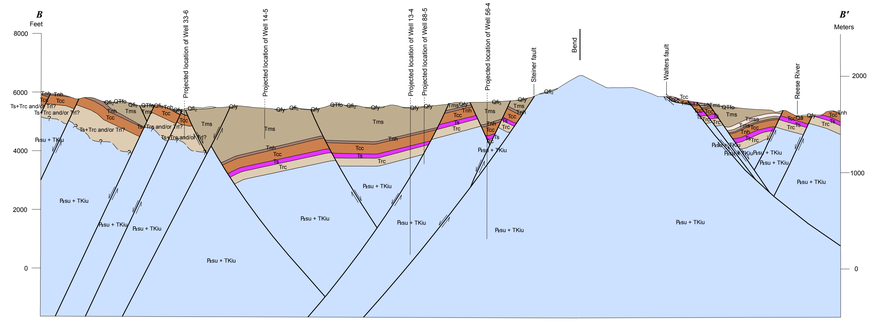
**Geothermal Leases**
Lease

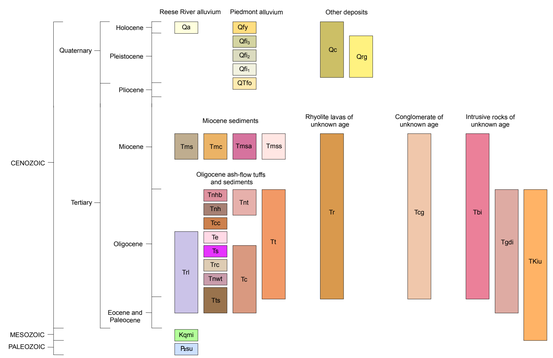
**Historical temperature gradient wells (<150m total depth)**
Well number
Maximum temperature (C°)
- <10
- 10–20
- 20–30
- 30–40
- 40–50
- 50–60
- 60–70

**Sierra Geothermal Power Corp 2009 temperature gradient wells (<300m total depth)**
Well number
Maximum temperature (C°)
- <10
- 10–20
- 20–30
- 30–40
- 40–50
- 50–60
- 60–70

**Sierra Geothermal Power Corp 2006 temperature gradient wells (500–1500m total depth)**
Well number
Maximum temperature (C°)
- <90
- 90–100
- 100–110
- 110–120
- 120–130
- 130–140
- 140–150




Adjoining 7.5' quadrangle names

| | | | |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 |
| 9 | 10 | 11 | 12 |

1 Mount Moses SE
2 The Cedars SW
3 The Cedars
4 Carico Lake South
5 Gilbert Creek NE
6 Manhattan Mtn. NW
7 Manhattan Mtn. NE
8 Hall Creek North
9 Gilbert Creek SE
10 Manhattan Mtn.
11 Joe Eason Mtn.
12 Hall Creek South

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Scale 1:24,000

0 — 0.5 — 1 kilometer

0 — 0.5 — 1 mile

0 — 1000 — 2000 — 3000 — 4000 — 5000 feet

CONTOUR INTERVAL 20–40 FEET

Projection: Universal Transverse Mercator, Zone 11, North American Datum 1927 (m)

Base map: U.S. Geological Survey Manhattan Mtn. 7.5' quadrangle (1980), Manhattan Mtn. NE 7.5' quadrangle (1969), Manhattan Mtn. NW 7.5' quadrangle (1969), Joe Eason Mtn. 7.5' quadrangle (1980)

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DRAFT
Preliminary geologic map
Has not undergone office or field review
Will be revised before publication

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